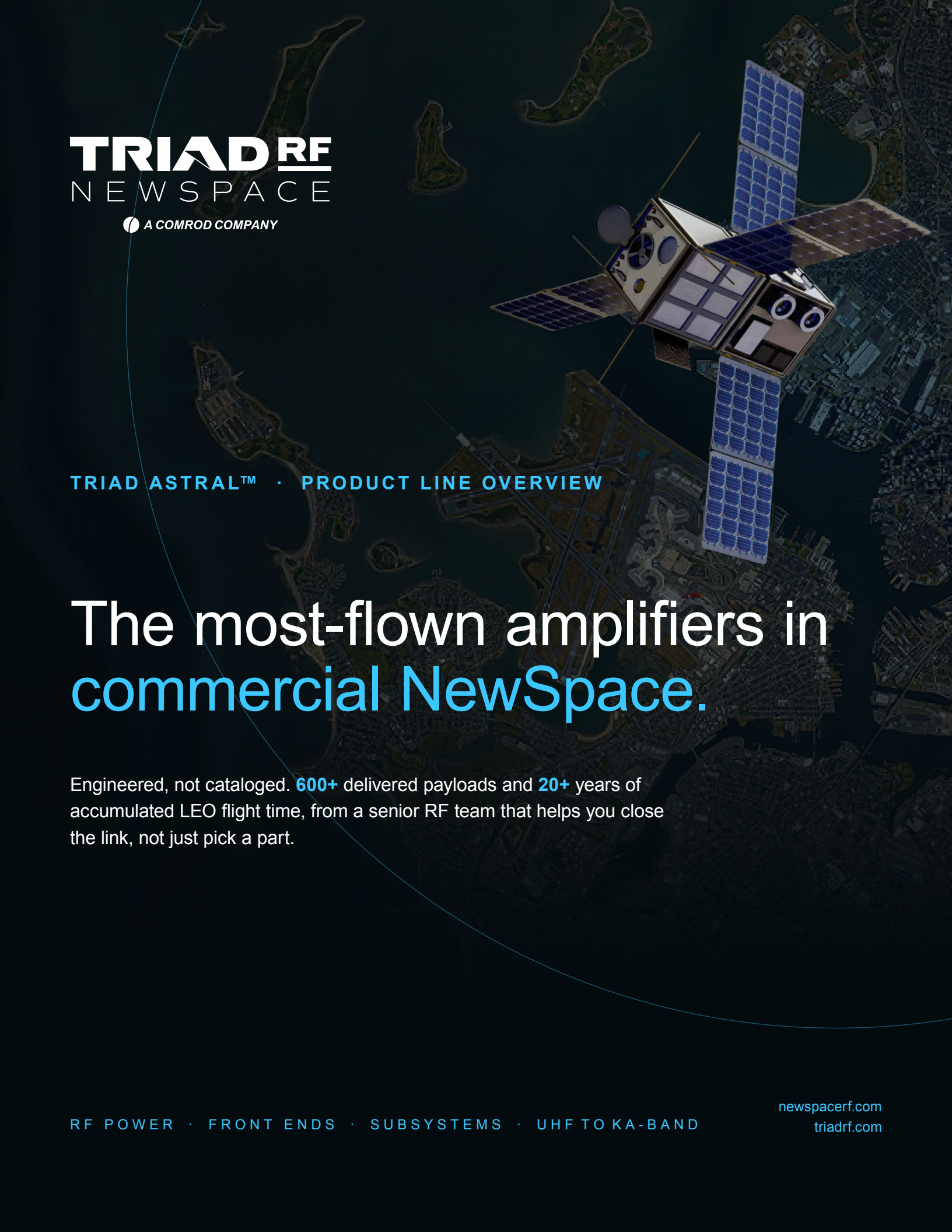




TRIAD_{RF}
NEWSPACE

● A COMROD COMPANY

TRIAD ASTRAL™ · PRODUCT LINE OVERVIEW

The most-flown amplifiers in commercial NewSpace.

Engineered, not cataloged. **600+** delivered payloads and **20+** years of accumulated LEO flight time, from a senior RF team that helps you close the link, not just pick a part.

RF POWER · FRONT ENDS · SUBSYSTEMS · UHF TO KA-BAND

newspacerrf.com
triadrf.com

ENGINEER TO ENGINEER

We help you solve the hard things.

Triad RF NewSpace is an engineering company that talks to engineers. Most RF suppliers hand you a catalog and a lead time. We start with your problem: the link you have to close, the SWaP envelope you cannot exceed, the SDR you have already chosen, and the frequency, power level, or form factor that nobody stocks on a shelf.

The senior RF engineer who answers your first question is the same engineer who designs your solution. There is no account-manager layer and no handoff to a junior bench. When the requirement is hard, that is when Triad is at its best. A custom-modified version of one of our designs is not the exception here. It is how we work.

Start from the requirement

Link budget, SWaP, thermal, and your SDR come first. The part number comes second. We design toward the mission, not away from a catalog page.

Solutions, not SKUs

Custom-modified versions of any Triad design are standard practice. If the shelf does not have it, we build the version that closes your link.

Direct access, all the way

You talk to the engineer solving the problem, from first question through flight. That is how hard RF problems actually get closed on schedule.

You bring the mission. We bring the flight heritage and the engineers to solve the RF problem underneath it.

WHY HERITAGE MATTERS

NewSpace rewrote the requirements. Our flight record already answers them.

Constellations launch on a commercial clock now. Missions are shorter, budgets are tighter, and volume is measured in hundreds of spacecraft a year. That rules out fully space-qualified parts and multi-year procurement for most of the market, and it puts the risk back on the RF engineer choosing the amplifier. The question underneath every selection is simple: will this part close the link, and has it done it before?

Triad has answered that question in orbit across 600+ delivered payloads and dozens of distinct customers, with more than 20 years of accumulated LEO flight time behind those parts. That is not a claim about the future. It is a record, and it is the difference between a part that should work and a part that already has.

600+ PAYLOADS DELIVERED	20+ yrs ACCUMULATED LEO FLIGHT TIME	UHF to KA FREQUENCY REACH	8-10 wk* TYPICAL LEAD TIME
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*Standard configurations. Custom design products require additional lead time.

WHAT WE STAND ON

Four pillars behind every solution

The engineering partnership is the difference. These four pillars are what make it credible.

01

PROVEN IN ORBIT



600+ payloads delivered. 20+ years of accumulated LEO flight time across distinct customers. We do not theorize space-readiness. We evidence it.

02

BUILT FOR SMALLSAT



Every design meets the SWaP, thermal, and shock realities of CubeSat and SmallSat platforms. Space-first parts, not defense parts adapted after the fact.

03

COMMERCIAL CADENCE



Concept to production in months, not years. Engineering, procurement, and quality flows sized for launch tempo, not waterfall programs.

04

ENGINEER TO ENGINEER



The senior RF engineer who answers your technical question is the one who solves it, and the one whose part flies. No layers in between.

Any SDR, any band, UHF through Ka. Proven with EnduroSat, GOMSpace, IQ Spacecom, and AAC Clyde Space.

TRIAD ASTAL™ / THE LINE

Product families

Every part below began as a customer requirement. Each is a proven starting point we can modify to your link. Representative flight-heritage parts shown here. Full datasheets on request.

POWER AMPLIFIERS TX / DOWNLINK

Solid-state and GaN power amplifiers for extended-range links and satellite downlinks.

High power in a low-SWaP footprint, customizable to your exact frequency and form factor.

PART		TYPE	FREQUENCY	POWER / NOTES
TA1165		GaN SSPA	5500-8500 MHz	20 W (43 dBm) Psat. Tuned for the 7.9-8.4 GHz Xband downlink.
TA1296		Power Amplifier	2000-2500 MHz	4 W (36 dBm) Psat.
TA1293 / TA1294		K-band Amplifier	24-26 GHz	3 W (35 dBm) Psat, 32 dB gain. L-band up/down converter option.

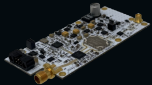
RADIO FRONT ENDS & TRANSCEIVERS TX / RX

Integrated transmit and receive front ends and full-duplex transceiver cards tuned for uplink and downlink performance and out-of-band rejection. SWaP-optimized for 1U and larger buses. Works with any SDR.

PART		TYPE	FREQUENCY	POWER / NOTES
TTRM2020		S-band Front End	1970-2220 MHz (n256)	10 W. FDD, integrated dual PA/LNA and passband filter. Triad's most popular S-band front end for CubeSat and SmallSat.
TTRM1212		Full-Duplex Lband Card	1518-1559 Tx / 1626.5-1675 Rx	5 W (36 dBm), 60 dB cross-band isolation, submicrosecond switching.

FREQUENCY CONVERTERS & TRANSLATORS **BAND TRANSLATION**

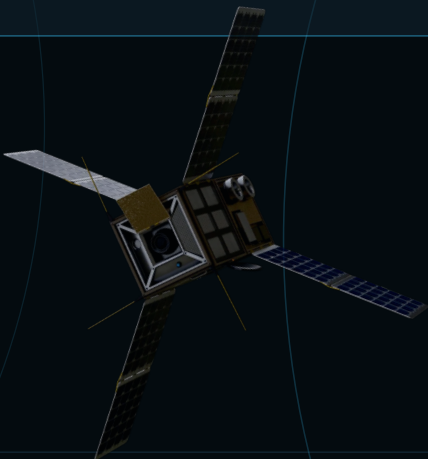
Up and down converters and frequency-translating amplifiers that move signals between IF and target bands, including L-band to K-band paths for high-throughput links.

PART		TYPE	FREQUENCY	POWER / NOTES
TFTA1010		Frequency-Translating Amp	In 2125-2625 / Out 8000-8500 MHz	3.2 W Psat.
TDC/TUC1003		L-band to K-band Converter	L 950-1950 / K 24-26 GHz	Up/down converter. Available with K-band amplifier.
TSYS1055		RF Extender Module	In 600-12000 / Out 600-6000 MHz	Low DC draw. Rx noise, phase, and spurious performance suited to LEO links.

BIDIRECTIONAL AMPLIFIERS & INTEGRATED ASSEMBLIES **BDA / IMA**

Small, lightweight COTS bidirectional amplifiers and multi-function integrated microwave assemblies that combine several RF functions in one package, for long-range, high-throughput data links. Configured to the mission rather than sold from a fixed shelf.

This is where we start, not where we stop. If a standard module does not fit your requirement, we design the modified version that does. Bring us your frequency, power budget, and form factor.



WHERE IT FLIES

Applications

The engineering partnership is the difference. These four pillars are what make it credible.

SmallSat & CubeSat downlinks X-band and K-band power for high-data-rate payload downlink.	Telemetry, tracking & command Reliable UHF and S-band links for spacecraft command and control.
Inter-satellite links Frequency translation and gain for cross-links between spacecraft.	Satellite 5G & NB-IoT (NTN) S-band front ends for non-terrestrial IoT networks and n256 5G.

THE RECEIPTS

Flight heritage

Triad Astral is a name on hardware that has already flown, not a launch announcement.

- 600+ payloads delivered to space-bound customers.
- 20+ years of accumulated LEO flight time.
- Flown on multiple SpaceX rideshare missions, including Falcon 9 Transporter-2 (2021), Transporter-4, and Transporter-5 (2022).
- Proven alongside leading SDR platforms: EnduroSat, GOMSpace, IQ Spacecom, and AAC Clyde Space.
- Frequency reach from UHF through Ka-band, covering telemetry, command, downlink, and inter-satellite communications.



U.S. - ENGINEERED, COMROD - BACKED

Where the parts come from

Triad Astral products are engineered and built in the United States, at Triad's ISO 9001:2015 certified facility in East Brunswick, New Jersey. U.S. engineering and manufacturing keep dual-use export straightforward for domestic programs, and as a subsidiary of Comrod Group of Norway, Triad adds European program reach that a U.S.-only supplier cannot match. Every part is designed for the operational LEO profile: shorter mission lifetimes, industrial-grade COTS economics, and the SWaP limits of small buses.

BUILT TO SCALE WITH YOU

Who Triad Astral products are for

Triad Astral products are built for the engineers who put amplifiers on spacecraft for a living: constellation builders, satellite integrators, and the RF and systems teams behind them. We meet you at the hard part, the first link that has to close and the requirement nobody stocks, and we build the part that flies. That first problem is where the relationship starts, not where it ends. As your program grows from a single payload to a full constellation, Triad grows with it: the same flight-proven designs and the same senior engineers, now running at production volume. We do the hard engineering to earn the larger runs, and we are built to scale with the mission.

FOR THE ENGINEER

Questions engineers ask

Q Do I talk to sales or to an engineer?

An engineer. The person who answers your first technical question is a senior RF engineer, not a rep, and they stay with the problem through flight.

Q What if I don't see my frequency, power, or form factor?

Then it is a conversation, not a dead end. Custom-modified versions of any Triad design are standard. Give us your link budget, SWaP envelope, and SDR and we design to close it.

Q Will Triad Astral parts work with my SDR?

Yes. Our products are designed to work with any SDR and are proven alongside EnduroSat, GOMSpace, IQ Spacecom, and AAC Clyde Space. Bring us your radio and we tune to it.

Q What does "most-flown" actually mean?

More than 600 RF payloads delivered and more than 20 years of accumulated LEO flight time across distinct customers. Operational scale, not a single marquee mission.

Q What are typical lead times?

Typically 8 to 10 weeks for standard configurations. Custom design products require additional lead time, and we will give you a firm schedule up front.

Q Where are they manufactured, and is export a problem?

Engineered and built in the United States (East Brunswick, NJ, ISO 9001:2015). U.S. manufacturing keeps dual use export straightforward for domestic programs; Comrod Group ownership adds European reach.

Q Can I review datasheets before I make contact?

Yes. Product content is published ungated so you can evaluate specs directly. Full datasheets are available to download or on request.

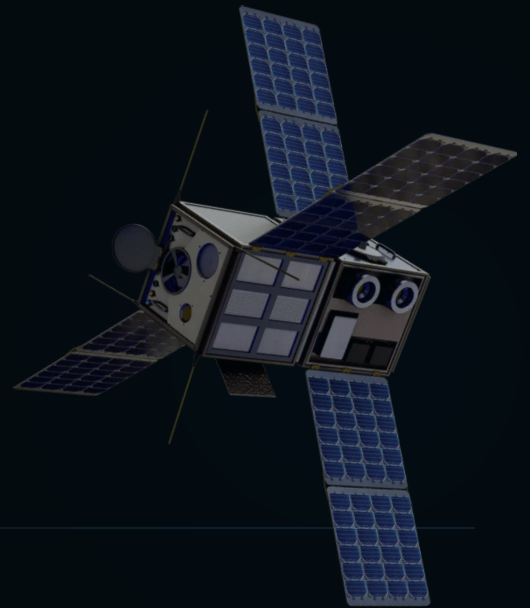
TALK TO AN ENGINEER

Bring us the link you need to close.

Tell us your frequency, power budget, form factor, and SDR. A senior RF engineer will tell you what already flies and what we can modify to fit.

[TALK TO AN ENGINEER](#)[REQUEST A QUOTE](#)**ABOUT TRIAD RF NEWSPACE**

Triad RF Systems engineers high-performance RF and microwave amplifiers and integrated radio systems for the most demanding communication platforms in space, in the air, and on the ground. With more than 20 years of accumulated LEO flight time and over 600 delivered payloads, Triad's amplifiers are the most-flown in commercial NewSpace, supporting CubeSat and SmallSat constellations, government research missions, and tier-1 prime programs. ISO 9001:2015 certified and headquartered in East Brunswick, New Jersey, Triad RF Systems is a subsidiary of Comrod Group of Norway.



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